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PATENT

Attorney Docket No. D0932-00385

Listing of Claims:

1. (Original) Inorganic fiber insulation material comprising:
scrap inorganic insulation fibers; and
plastic-containing bonding fibers;
said scrap inorganic fibers and the plastic-containing bonding fibers being uniformly blended and bonded together by a portion of the plastic of said plastic-containing bonding fibers.

2. (Original) The inorganic fiber insulation material of claim 1, wherein the fiber glass insulation material has substantially uniform density throughout its volume.

3. (Original) The inorganic fiber insulation material of claim 1, wherein the scrap inorganic insulation fibers are scrap rotary glass fibers, scrap textile fibers, or both.

4. (Original) The inorganic fiber insulation material of claim 1, wherein the scrap inorganic insulation fibers have average diameter of about 1 to 10 micrometers.

5. (Original) The inorganic fiber insulation material of claim 1, wherein the scrap inorganic insulation fibers have average diameter of about 2 to 5 micrometers.

6. (Original) The inorganic fiber insulation material of claim 1, wherein the scrap inorganic insulation fibers have an average fiber length not greater than about 250 mm.

7. (Original) The inorganic fiber insulation material of claim 1, wherein the scrap inorganic insulation fibers have an average fiber length not greater than about 127 mm.

8. (Original) The inorganic fiber insulation material of claim 1, wherein the scrap inorganic insulation fibers are about 70 to 90 wt. % of the inorganic fiber insulation material.

9. (Original) The inorganic fiber insulation material of claim 1, wherein the plastic-containing bonding fibers comprise bi-component fibers.

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10. (Original) The inorganic fiber insulation material of claim 9, wherein the bi-component fibers are sheath-core, side-by-side, island-in-the-sea, or segmented-pie cross-section type.

11. (Original) The inorganic fiber insulation material of claim 9, wherein the bi-component fibers comprise:

a core material; and

a sheath material, wherein the sheath material has a melting point temperature lower than the melting point temperature of the core material.

12. (Original) The inorganic fiber insulation material of claim 11, wherein the core material and the sheath material are both thermoplastic polymers.

13. (Original) The inorganic fiber insulation material of claim 11, wherein the core material is a mineral and the sheath material is a thermoplastic polymer.

14. (Original) The inorganic fiber insulation material of claim 11, wherein the core material and the sheath material are same thermoplastic polymer but of different formulations.

15. (Original) The inorganic fiber insulation material of claim 1, wherein the plastic-containing bonding fibers comprise mono-component thermoplastic polymer fibers.

16. (Original) The inorganic fiber insulation material of claim 1, wherein the plastic-containing bonding fibers have average fiber diameter of about 10 to 20 micrometers.

17. (Original) The inorganic fiber insulation material of claim 1, wherein the plastic-containing bonding fibers have average fiber diameter not greater than 16 micrometers.

18. (Original) The inorganic fiber insulation material of claim 1, wherein the plastic-containing bonding fibers are about 10 and 30 wt. % of the inorganic fiber insulation material.

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19. (Original) The inorganic fiber insulation material of claim 1, wherein said inorganic fiber insulation material has a gram weight of about 310 to 2100 gm/m^2.

20. (Original) The inorganic fiber insulation material of claim 1, wherein said inorganic fiber insulation material has a density of about 24 to 48 kg/m^3.

21. (Original) The inorganic fiber insulation material of claim 1, wherein said inorganic fiber insulation material after curing has a thickness of about 13 to 89 mm.

22. (Original) Inorganic fiber insulation product having an R-value comprising:

a final mat having a first side and a second side, the mat comprising:

loose fiber insulation-type glass fibers;

plastic-containing bonding fibers, said glass fibers and the plastic-containing bonding fibers being uniformly blended together to form a blended layer having a substantially uniform density throughout its volume, wherein the plastic-containing bonding fibers bond at least a portion of the glass fibers together; and

a facing layer bonded to at least one of the two sides of the mat.

23. (Original) The inorganic fiber insulation product of claim 22, wherein said glass fibers are scrap loose fiber insulation-type glass fibers.

24. (Original) The inorganic fiber insulation product of claim 22, wherein said glass fibers are virgin loose fiber insulation-type glass fibers and the insulation product is substantially formaldehyde-free.

25. (Original) The inorganic fiber insulation product of claim 22, wherein the facing layer is a vapor barrier.

26. (Original) The inorganic fiber insulation product of claim 22, wherein the vapor barrier is polyethylene film, kraft paper, kraft paper coated with asphalt, foil, foil-backed paper, foil-backed paper coated with asphalt, or flame-resistant foil-scrim-kraft paper.

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27. (Original) The inorganic fiber insulation product of claim 22, wherein the facing layer is made from a scrim, woven, non-woven, knit, braided, needled, or composite fabric.

28. (Original) The inorganic fiber insulation product of claim 27, wherein the fabric layer is treated with water resistant additive made from epoxy foam, acrylic, or asphalt.

29. (Original) The inorganic fiber insulation product of claim 22, wherein said glass fibers are scrap rotary glass fibers, scrap textile fibers or a combination thereof.

30. (Original) The inorganic fiber insulation product of claim 22, wherein said glass fibers have average diameter of about 1 to 10 micrometers.

31. (Original) The inorganic fiber insulation product of claim 22, wherein said glass fibers have average diameter of about 2 to 5 micrometers.

32. (Original) The inorganic fiber insulation product of claim 22, wherein said glass fibers have an average fiber length not greater than about 250 mm.

33. (Original) The inorganic fiber insulation product of claim 22, wherein said glass fibers have an average fiber length not greater than about 127 mm.

34. (Original) The inorganic fiber insulation product of claim 22, wherein said glass fibers comprise about 70 to 90 wt. % of the final mat.

35. (Original) The inorganic fiber insulation product of claim 22, wherein the plastic-containing bonding fibers comprise bi-component fibers.

36. (Original) The inorganic fiber insulation product of claim 22, wherein the plastic-containing bonding fibers comprise mono-component thermoplastic polymer fibers.

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37. (Original) The inorganic fiber insulation product of claim 35, wherein the bi-component fibers are sheath-core, side-by-side, island-in-the-sea, or segmented-pie cross-section type.

38. (Original) The inorganic fiber insulation product of claim 35, wherein the bi-component fibers comprise:

a core material; and

a sheath material, wherein the sheath material has a melting point temperature lower than the melting point temperature of the core material.

39. (Original) The inorganic fiber insulation product of claim 38, wherein the core material and the sheath material are both thermoplastic polymers.

40. (Original) The inorganic fiber insulation product of claim 38, wherein the core material is a mineral and the sheath material is a thermoplastic polymer.

41. (Original) The inorganic fiber insulation product of claim 38, wherein the core material and the sheath material are same thermoplastic polymer but of different formulations.

42. (Original) The inorganic fiber insulation product of claim 22, wherein the plastic-containing bonding fibers have average fiber diameter of about 10 to 20 micrometers.

43. (Original) The inorganic fiber insulation product of claim 22, wherein the plastic-containing bonding fibers have average fiber diameter not greater than 16 micrometers.

44. (Original) The inorganic fiber insulation product of claim 22, wherein the plastic-containing bonding fibers are about 10 and 30 wt. % of the final mat.

45. (Original) The inorganic fiber insulation product of claim 22, wherein said inorganic fiber insulation product has a gram weight of about 310 to 2100 gm/m^2.

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46. (Original) The inorganic fiber insulation product of claim 22, wherein said inorganic fiber insulation product has a density of about 24 to 48 kg/m^3.

47. (Original) The inorganic fiber insulation product of claim 22, wherein said inorganic fiber insulation product after curing has a thickness of about 13 to 89 mm.

48. (Currently amended) The inorganic fiber insulation product of claim 22, wherein the R-value is between about 2.0 to 3.5 hr·ft2·°F/Btu per inch.

49-55. (Canceled)

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